Project Case Study

Desalination Plant - Reverse Osmosis Racks

End User	Water Corporation WA
Client	Southern Sea Water Alliance
Location	Binningup, WA
Market Sector	Water Infrastructure

Scope of Work:

Alltype Engineering was subcontracted to supply modular reverse osmosis (RO) racks for Stage 1 of the Desalination Plant at Binningup in Western Australia. Due to successful project performance, Alltype Engineering was subsequently selected to supply the reverse osmosis racks for Stage 2.

Each contract consisted of 16 first pass racks, 4 second pass rack, 8 ERD racks, and associated interconnecting pipe spooling

Rack components fabricated and/or supplied by Alltype Engineering consisted of carbon steel racks, high pressure Super duplex, duplex and stainless steel pipe spools and low pressure Polypropylene pipe spooling with the reverse osmosis pressure vessels supplied by the client.

The carbon steel racks needed to be fabricated to a high degree of accuracy so the 122 reverse osmosis pressure vessels (per rack) and associated interconnecting Super duplex, duplex, stainless steel and polypropylene pipe spooling could be fitted to the tolerances required to prevent leaking. Tight quality control was also required on the painting of the racks because of the highly corrosive saline atmosphere created by the reverse osmosis process.

The Super duplex pipe spooling, ranging from 550mm diameter down to 20mm diameter, not only had to be fabricated to these stringent dimensional tolerances, but also welding within tight welding procedure parameters so the material retained its anti-corrosive properties.

Each rack was preassembled at Alltype Engineering in Naval Base, WA which resulted in significant cost saving for the client.

The reverse osmosis pressure vessels were installed use specialised equipment designed and built by Alltype Engineering.